

REMARKS

In the present Amendment, claims 11-14 have been added.

Claim 11 depends from claim 1 and recites that Z in the structural unit represented by formula (X) represents either a substituted phenyl group or a substituted cyclohexyl group, as seen in more detail in the claim. Section 112 support for claim 11 may be found for, example, at page 10 and page 22 of the specification.

Claim 12 depends from claim 11, and recites that Z is a substituted phenyl group, as seen in more detail in the claim. Section 112 support for claim 12 is the same as for claim 11.

Claim 13 depends from claim 1, and recites that the resin (a) in the positive resist composition has a molecular weight distribution of from 1.0. to 1.6. Section 112 support for claim 13 may be found, for example, at page 38, line 7 of the specification.

Claim 14 depends from claim 10, and recites that the actinic ray or radiation is one of an electron beam, an X ray and an EUV beam. Section 112 support for claim 14 may be found, for example, at page 38, three lines from the bottom, of the specification.

Upon entry of the amendment, which is respectfully requested, claims 1-14 will be pending.

In Paragraph Nos 4-6 of Action, claims 1-10 are rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by Nishiyama et al. (U.S. 6,537,718 B2).

Applicants submit that this rejection should be withdrawn because Nishiyama et al. '718 does not disclose or render obvious the positive resist composition of the present invention.

As recited in independent claim 1, the positive resist composition of the present invention includes (a) a resin and (b) a compound that generates an acid upon irradiation with actinic rays

or radiation. The resin (a) decomposes by the action of an acid to increase its solubility in an alkali developing solution. The resin contains a structural unit having a group represented by formula (X) as shown in claim 1. In addition, the resin has a weight average molecular weight of not more than 5,000. Still further, the resin contains an acid decomposable group in an amount of not more than 40% based on the sum total of the number of the acid decomposable groups and the number of alkali-soluble groups not protected with an acid decomposable group. See independent claim 1.

Turning to Nishiyama et al., Applicants respectfully note that the Examiner has made an error on page 3 of the Action. That is, the structural formula at the top of page 3 of the Action is formula (IV-36) of Nishiyama et al., not formula (IV-35) as indicated by the Examiner.

The Examiner's reasoning relating to formula (IV-35) in the text on page 3 of the Action actually applies to formula (IV-36) of Nishiyama et al, not formula (IV-35). While the formulas have been transposed and the reasoning would be slightly different in each case, the Examiner appears to be correct that the first repeating unit in each of formulas (IV-35), (IV-36) and (IV-37) of Nishiyama et al would meet the limitations of formula (X) in present claim 1.

Applicants respectfully point out, however, that the resins of Nishiyama et al. cited in the Office Action (that is, the resins of formulas (IV-35), (IV-36), (IV-37) and (IV-43)) are not employed in the working examples Nishiyama et al. '718.

Further, the Examiner does not directly address the recitation in present claim 1 that the resin must have a weight average molecular weight of not more than 5,000, except to say that the molecular weight of the taught resin in Nishiyama et al. preferably is in the range of 2,000 to 300,000, citing column 38, lines 1-17 of Nishiyama et al. Nishiyama et al.'s disclosure of a very

broad range of 2,000 to 300,000 does not anticipate or render obvious the specific and narrow weight average molecular weight requirement of the present claims, namely, a weight average molecular weight of not more than 5,000.

Still further, the Examiner does not directly address the recitation of present claim 1 that the resin must contain an acid decomposable group in an amount of not more than 40% based on the sum total of the number of acid decomposable groups and the number of alkali-soluble groups not protect with an acid decomposable group. The positive resist composition of the present invention thus selectively employs a resin that has a specific protection (acid decomposable group) rate. This is an additional distinction relative to Nishiyama et al.

The claims of the present application define both the weight average molecular weight and the “protection” rate in specific ranges, so that the positive resist composition of the present invention provides or generates specific effects in terms of improvements in *in vacuo* PED in cases of drawing with an electron beam. Nishiyama et al. ‘718 does not disclose, fore shadow or suggest these improvements, nor does Nishiyama et al. disclose or fairly suggest the specific positive resist composition of the present invention. Applicants respectfully submit that the positive resin composition of the present invention is novel and patentable over Nishiyama et al. ‘718.

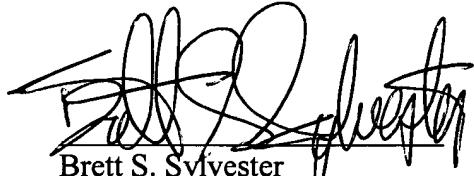
For these reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-10 based on Nishiyama et al. ‘718.

Amendment under 37 C.F.R. § 1.111
U.S. Patent No. 10/812,074

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Allowance is respectfully requested.

Respectfully submitted,



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